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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/522,428

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Girish G Parekh

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EXAMINER

JACOBSON, MICHELE LYNN

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/522,428	Applicant(s) PAREKH ET AL.	
	Examiner MICHELE JACOBSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9-23 and 25-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-23 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/13/09 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 9-15, 18-23 and 25-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Heyenk et al. International Publication Number WO 98/47974 (hereafter referred to as Heyenk) as evidenced by Parekh et al. U.S. Patent No. 6,235,102 (hereafter referred to as Parekh).

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4. Regarding claims 1-6 and 9: Heyenk teaches a resin comprising a mixture of at least two polymers wherein at least one polymer has a glass transition temperature (T_g) greater than about 45° C. (Pg. 1, line 29-Pg. 2, line 2). Generally, the second polymer has a dry solids content between 30% and 100% and T_g less than 40°C, preferably a dry solids content of at least 50% and T_g less than 10°C (which is less than 25°C as claimed by applicant). (Pg. 2, lines 22-30) The weight proportion of the polymer having a T_g higher than 45° C is at least 25% (relative to the polymers). (Pg. 3, lines 21-23) Suitable polyalcohols for preparing the polyesters are recited to include ethylene glycol, diethylene glycol, butanediol (1,4), hexanediol (1,6), neopentyl glycol, 2-methyl-1,3-propanediol, 1,3-butanediol, 1,3-propanediol, 1,2-propanediol, 2-ethyl-2-butyl-1,3-propanediol, trimethylpentanediol, hydroxypivalic neopentyl glycol ester, tricyclodecane dimethanol, cyclohexane dimethanol, bisphenol A bishydroxyethyl ether, trimethylolpropane and/or pentaerythritol. The coating of the invention is recited to be useful as interior or exterior coatings for beer cans, cans for other beverages and can ends made of substrates such as aluminum (i.e. can body and end portions). (Pg. 8, lines 23-28)

5. The polymer mixture according to the invention has to be cured with a crosslinker of which amino resin crosslinkers such as benzoguanamine, melamine and urea-formaldehyde resins are recited. The amino resin cross linkers are recited to be present in amounts of between 5-40 wt %. (Pg. 4, lines 7-8, 26-30) Crosslinkers containing isocyanate groups are also recited to be useful. (Pg. 4, lines 11-12) Heyenk clearly teaches the compositional limitations of claim 1. Regarding applicant's recitation

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of one of the polyester resins have a T_g of greater than 50°C , the recitation in Heyenk of a T_g of greater than 45°C is deemed by the examiner to be sufficiently specific to anticipate the range of greater than 50°C as claimed by applicant since one of ordinary skill would have immediately envisaged that the recitation “greater than 45°C ” included T_g ’s greater than 50°C . (See MPEP 2131.03 II) Alternatively, Heyenk disclose the use of a polyester resin having a T_g greater than 45°C , while the present claims require a T_g greater than 50°C .

6. It is apparent, however, that the instantly claimed amount of greater than 50°C and that taught by Heyenk are so close to each other that the fact pattern is similar to the one in In re Woodruff , 919 F.2d 1575, USPQ2d 1934 (Fed. Cir. 1990) or Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed.Cir. 1985) where despite a “slight” difference in the ranges the court held that such a difference did not “render the claims patentable” or, alternatively, that “a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough so that one skilled in the art would have expected them to have the same properties”.

7. In light of the case law cited above and given that there is only a “slight” difference between the amount of greater than 45°C disclosed by Heyenk and the amount disclosed in the present claims, it therefore would have been obvious to one of ordinary skill in the art that the amount of greater than 50°C disclosed in the present claims is but an obvious variant of the amounts disclosed in Heyenk, and thereby one of ordinary skill in the art would have arrived at the claimed invention.

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8. Evidence that the composition recited by Heyenk would be substantially free of mobile BPA and aromatic glycidyl ether compounds is found in Parekh which teaches that bisphenol monomers (e.g. bisphenol A) and glycidyl ether monomers (e.g. BADGE) are present in can coatings that use epoxy or phenolic resins. (Col. 2, line 54-Col.3, line26)

9. Since Heyenk teaches amino resin and isocyanate resin cross linkers in addition to and as an *alternative* to epoxy based cross linkers, the invention of Heyenk would inherently be completely free of bisphenol and glycidyl ether monomers such as BPA, BADGE, BFDGE and NOGE according to applicants' definition. Therefore Heyenk anticipates/obviates the limitations recited in claims 1-5 and 9. Heyenk also teaches other polyols in addition to neopentyl glycol so the limitation of the polyol used to make the polyester of claim 6 being substantially NPG free is anticipated.

10. Regarding claim 10: The polymers are preferably polyesters with molecular weights between 2000 and 15000 and a difference in glass transition temperatures greater than 5° C. (Pg. 2, lines 5-12)

11. Regarding claims 11 and 12: Depending on the desired use, the acid numbers of the polyesters recited by Heyenk range between 0-100 mg of KOH/g of resin and the hydroxyl numbers of the polyesters range between 0-150 mg of KOH/g of resin. (Pg. 3, line 30-Pg. 4, line 2) Example 1 of Heyenk discloses a polyester resin with an acid number of 3.5 mg of KOH/g of resin and a hydroxyl number of 18.5 mg of KOH/g of resin, both values of which anticipate the ranges recited by applicant. Additionally, the recitations of Heyenk are sufficiently specific since one of ordinary skill would have

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immediately envisaged that it would be desirable to have the least amount of free acid in a polymer that is intended to be in contact with consumable substances.

Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the composition to decrease the amount of free acid and therefore decrease the acid and hydroxyl numbers of the composition within the ranges claimed by applicant for a coating intended to be in contact with food.

12. Regarding claims 13-15 and 26: Since the polymer of Heyenk is recited to be comprised of 5-40 wt % amino resin crosslinker and no other mandatory additives the rest is comprised of 60-95 wt % polyester as claimed in claims 13 and 26. These ranges are sufficiently specific to anticipate the range of 65-85 wt % polyester resin recited in claim 14 and the range of 10-30 wt % crosslinker recited in claim 15.

Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the amount of crosslinker in the composition within the range recited by Heyenk in order to achieve the most beneficial properties of strength for the coating produced from the composition. Such optimization would have resulted in the cross linker and polyester resin being present in an amount within the ranges recited in claims 14 and 15.

13. Regarding claims 18 and 19: The coating of the invention is recited to be useful as interior or exterior coatings for beer cans, cans for other beverages and can ends made of substrates such as aluminum. (Pg. 8, lines 23-28) Methods such as the drawn-redrawn or draw-wall ironed methods are recited for production of the cans. (Col. 4, lines 33-34) The limitation in claim 18 that the end portion of the can be coated with the

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composition prior to fabrication is a product by process limitation and is not expected to produce a materially different product from a can end that was coated after fabrication.

Since Heyenk specifically discloses the usefulness of the composition recited for coating can ends the limitation of claim 18 is anticipated. Heyenk also recites the usefulness of the composition for coating both the exterior and interior of cans so the limitations of claim 19 are anticipated as well.

14. Regarding claims 20, 21 and 27: The composition of claim 20 is anticipated by Heyenk and method recited in claims 20 are well known steps of the drawn-redrawn method of can production recited by Heyenk. It is standard practice to coat a metal substrate with polymer and allow it to cure in the drawn-redrawn method and thus the limitations of claim 21 are anticipated by Heyenk. Heyenk clearly recites that the coating is useful for beverage cans and therefore anticipates the limitations of claim 27.

15. Regarding claim 22, 23 and 25: Since the composition recited by Heyenk is the same as that recited by applicant it is the examiner's opinion that it would inherently pass the same amount of current as recited by applicant in claim 22. The composition of Heyenk is recited to be useful for food contact packaging and coating can ends and since it may be synthesized in the absence of epoxy or phenolic resins is inherently substantially free of BPA and aromatic glycidyl ether compounds as recited in claims 23 and 25.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heyenk et al. International Publication Number WO 98/47974 (hereafter referred to as Heyenk) and Parekh et al. U.S. Patent No. 6,235,102 (hereafter referred to as Parekh).

18. Heyenk teaches what has been recited above but is silent regarding the addition of an acrylate copolymer having glycidyl groups.

19. Parekh teaches the addition of an acrylate copolymer having pendant glycidyl groups and to an acid-terminated polyester in a nonaqueous carrier in order to produce a compound that effectively inhibits corrosion of ferrous and nonferrous metal substrates such as aluminum upon curing and cross linking. (Col. 5, lines 30-32, lines 40-50) The coating composition is also free of glycidyl ether and bisphenol monomers such as BADGE and bisphenol A. (Col. 5 lines 32-37) The coating composition is recited to comprise (a) about 50% to about 90% by weight of an acrylate copolymer having pendant glycidyl groups and (b) about 10% to about 50% by weight of an acid-terminate polyester. The coating composition is prepared by simply admixing the

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copolymer, the polyester, and any optional ingredients, in any desired order, in the non-aqueous carrier, with sufficient agitation. (Col. 13, lines 41-45)

20. The motivation to combine the teachings of Parekh with the composition of Heyenk would have been to improve the corrosion barrier properties of the coating composition of Heyenk. The composition of Parekh inhibits the corrosion of metals by simply admixing the acrylate copolymer with pendent glycidyl groups with polyester. It follows that the addition of acrylate copolymer with pendent glycidyl groups would therefore improve the corrosion barrier properties of other polyesters.

21. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have added acrylate copolymer with pendent glycidyl groups to the polyester composition of Heyenk in order to produce the invention as claimed in claims 16 and 17. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the amount of acrylate copolymer added to the polyester composition in order to optimize the corrosion resistance of the composition. Such an optimization would have resulted in the invention claimed in claims 16 and 17.

22. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heyenk et al. International Publication Number WO 98/47974 (hereafter referred to as Heyenk) as evidenced by Parekh et al. U.S. Patent No. 6,235,102 (hereafter referred to as Parekh) and Maska et al. U.S. Patent No. 5,252,669 (hereafter referred to as Maska).

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23. Heyenk and Parekh teach what has been recited above but are silent regarding the use of a phenoplast for cross-linking.

24. Maska teaches that aminoplasts and phenolic resins such as the condensation product of an aldehyde with a phenol are useful cross-linking curing agents for coating compositions. (Col. 6, lines 59-63) Formaldehyde and acetaldehyde are preferred aldehydes. Various phenols can be used, e.g., phenol per se, cresol, p-phenylphenol, p-tert-butylphenol, p-tert-amylphenol and cyclopentylphenol. (Col. 7, lines 19-23)

25. Both Heyenk and Maska teach aminoplasts as crosslinking curing agents. Maska teaches that phenoplasts were known in the art as equivalent crosslinking agents. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted a phenoplast such as those taught by Maska for an aminoplast as the curing agent in the invention of Heyenk since phenoplasts were art recognized equivalents known for the same purpose as aminoplasts in coating compositions. (See MPEP 2144.06) This obvious substitution would have produced the invention as claimed in claim 28.

Response to Arguments

26. Applicant's arguments with respect to claims 1-6, 9-23 and 25-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is (571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

Michele L. Jacobson
Examiner /M. J./
Art Unit 1794